Subject:	FCC meeting, PTC and rail wireless, spectrum / outstanding 200 MHz- 900 MHz offers to US transit rail
From:	Warren Havens (warren.havens@sbcglobal.net)
To:	brozowskik@scrra.net; feldman@fhhlaw.com; SMiller@hansonbridgett.com; HillS@amtrak.com; MccartT@amtrak.com; lmovshin@wbklaw.com; hansen@mnr.org; jennings@mnr.org; makelly@lirr.org; jwasilak@njtransit.com; TPrice@njtransit.com; RMarshall@dart.org; LSachs@fcclaw.com; Steve.jones@mbta.com; SXJones@MBTA.com; gchertock@ltk.com; feldman@fhhlaw.com;
Cc:	wmillar@apta.com; jstobaugh@telesaurus.com; rvanark@hsr.ca.gov;
Date:	Saturday, September 3, 2011 8:50 PM

TO -

SCRRA: <brozowskik@scrra.net>; feldman (SCRRA) <feldman@fhhlaw.com>; Steven D. Miller <SMiller@hansonbridgett.com>;

AMTRAK: HillS@amtrak.com; MccartT@amtrak.com; lmovshin@wbklaw.com;

LIRR & MNR: hansen@mnr.org; jennings@mnr.org; makelly@lirr.org;

NJT: jwasilak@njtransit.com; TPrice@njtransit.com;

DART: RMarshall@dart.org; LSachs@fcclaw.com;

MBTA: SXJones@MBTA.com; Steve.jones@mbta.com; gchertock@ltk.com;

PJPB: Peninsula Corridor Joint Powers Board: feldman (PJPB) <feldman@fhhlaw.com>

CHSRA: California High Speed Rail Authority: Reolof van Ark <rvanark@hsr.ca.gov>

CC -

FTA: Peter M. Rogoff, Administrator, via fax to (202) 219-3545

APTA: William Miller, President, wmillar@apta.com; Michael P. Melaniphy, President and CEO (elected), via fax to (202) 496-4324

Others: as shown on the email.

Bcc - Others as appropriate, including FCC-practice legal counsel to undersigned entities.

This email presents information and views of the undersigned.

Attached hereto is a presentation in the FCC PTC spectrum docket, 11-79, that, in turn, is about a FCC meeting. As shown in the attached, one topic at the meeting is the following: (my companies, including our nonprofit Foundation, holds a plurality of 217-222 MHz in the nation, and a plurality of lower-900 MHz for Intelligent Transportation Systems):

> " V. Warren Havens, for Skybridge et al [3] will present a brief explanation of spectrum offerings for PTC.
> Note: I have generally argued for years, like Mr. Lindsay, that railroad should not get stuck on 220 MHz range
> spectrum, but adopt smart, SDR, multi-band, multi-protocol radios, reuse their own existing spectrum better, etc. But
> if want 220 MHz range, I have two proposals, on open non-confidential terms:
> Both are in docket 11-79:
>
> " • PTC Spectrum Offer 1: (partial summary) No cost for substantial spectrum (in 217-220 MHz) for

PTC nationwide for metro public passenger rail entities, based on FCC grant of "swap" spectrum in 30-50 MHz range for a "cognitive radio" license for nationwide smart transport, energy and environment (with core capacity and functions at no cost, like GPS).

" • PTC Spectrum Offer 2: (partial summary) Sale for price in range of what MCLM sold spectrum to SCRRA (which is shown in the FCC assignment application) and with options for railroads to terminate the sale, if incumbents (in some markets) are not cleared or any other reason. That is, this will secure spectrum now, and allow PTC to proceed, if indeed railroads believe they need this 220 MHz range spectrum, or will be more efficient with it, for PTC. Sellers will put some of the proceed back into ITS in the US for nonprofit basis, etc. All contracts would be public, open, and not restrict railroads from another other spectrum solution. "

In my presentation of the above topic, I will note the offers that I sent to entities receiving this email, and the responses.

Frankly, 900 MHz can be, in the long run, better for any metro mobile transportation radio service, for easy to show technical and component reasons. *[*]* 160 MHz and other VHF is better for more rural areas. The two are easy to use together with half-way modern technology. This requires objective assessment, not pandering to parties pushing a private agenda, not artificially making up a spectrum-shortage scare as fishing bait for taxpayers' money or PTC deadline extensions, and not seeking illicit spectrum based on false threats to US safety if you don't get it (where this problem, to the degree it exists, is your own creation: rail PTC lacks credibility to cry wolf).
- - - -
[*] My companies also offered substantial M-LMS lower-900 MHz, high-power, long-range spectrum in the FCC-designated ITS service M-LMS to US transit rail.
- It is fundamental that coverage distance is not solely a function of frequency range (lower goes further) but involves other facts including antenna types and gains, bandwidth and coding gain, required QoS vs. BER in given spectrum, whether in-structure coverage and hand-portables are needed (higher generally better, up to 900 MHz-plus), etc.
- Also, cost of coverage is not realistic: total costs of coverage, radio terminals, upgrades, etc. must be assessed.
- It can be shown that using wider 900 MHz (vs less 200 MHz spectrum) will provide more capacity and performance, and after substantial build out and use, no more total cost (see above), and less total cost per delivered capacity and QoS.
- But again, if rail is fixated on 200 MHz, my companies can provide it. Or can provide some 200 MHz and some 900 MHz: that may be ideal for the larger metro areas and perhaps others.
- The best solution may be multi-agency networks of networks (whether TETRA is used or not). An example is here (my companies have no stake in anything shown in this example, but know Rohill, which produced this video): *http://www.youtube.com/watch?v=Q1MBLwo7qkY&feature=related* (go to time 2:10 re Seville metro, city, and airport network of networks).
- - - -
It is apparent that US railroads generally are trying NOT to implement new wireless including PTC, at least as mandated. This is shown in the presentations that lack technical and economic substance, and coherent plans and proposals-- e.g., as if the FCC is supposed to solve your spectrum problems when you show virtually little genuine effort on your part, e.g., as if only the US can't use multiple band, modify standards and tech (including GSM-R, TETRA, though they are now old, etc.), use digital tech and computer-based wireless (SDR at least), do network architecture and plans and projections, etc.-- the basic steps of any real solution attempt. It is spurious to assert a lack of solutions, while most of the rest of the world (with spectrum and other issues as in the US) is pulling ahead in wireless for critical transport and government use.

You all know the inside story here and should not peddle fairy tales to the FCC, FTA, Congress etc. My companies do not do business based on money over the public interest. We especially object when attorneys "at law," alleged objective technical consultants, and their governmental clients do that. If that costs my companies money from and standing in that community, we don't want that business, and we challenge it in the public interest as citizens (government of, for and by the people...).

Railroads: You should not necessarily count on DC attorneys to be objective in your interests, even if you think they do not have any apparent conflicts of interest. Call me and I will discuss, and you can quote may on all I say. In any case, 47 USC § 217 (part of the Communications Act) applies: *http://codes.lp.findlaw.com/uscode/47/5/II/I/217*.

Please contact me if you have any comments on matters in the attachment hereto or the above email.

This email and the attachment are not confidential.
A copy will be filed in FCC docket 11-79.

We will also present these matters to relevant Congressional offices.

Warren Havens
President
Skybridge Spectrum Foundation
ATLIS Wireless LLC
V2G LLC
Environmentel LLC
Verde Systems LLC
Telesaurus Holdings GB LLC
Intelligent Transportation & Monitoring Wireless LLC
Berkeley California
www.scribd.com/warren_havens/shelf
510 841 2220 x 30
510 848 7797 -direct

Attachment to above email.

Subject:	Re: dock. 11-79- meeting request, with noted railroad experts, re nationwide PTC- nature, tech, spectrum, etc.
From:	Warren Havens (warren.havens@sbcglobal.net)
To:	Richard.Arsenault@fcc.gov;
Cc:	Julius.Knapp@fcc.gov; ron@strategicrailroading.com; comarch@aol.com; kevin.nichter@lileesystems.com; Laura.Phillips@dbr.com; Patrick.McFadden@dbr.com; jstobaugh@telesaurus.com;
Date:	Saturday, September 3, 2011 4:32 PM

Mr. Arsenault,

I am confirming the **Weds 9-14 date**, **1-2 PM**, at FCC offices.
Please give instructions (front entrance or other, and who to call, etc.).
- Mr. Lindsey will attend in person.
- I will attend by teleconference with speaker phone on your side.
  - I may have an attorney from Drinker Biddle that now works for my companies, attend to sit in. I copy Laura Phillips and Patrick McFadden here.
- Mr. Nichter will likely not attend this 1-hr. meeting.

Thank you,
Warren Havens

I will file this email string now in docket 11-79.

Question: Would the FCC have any preferences, objections, or comments as to the idea I noted below: that I could arrange, at my companies' cost, for an outside company (a professional firm such as those that do video depositions) to attend the meeting, make a video, that would then be put into docket 11-79 as an exparte presentation report? I am all for full disclosure and not loopholes as to compliance with ex parte rules. This would be as full a report as possible, and a more full record if the FCC later chose to review and use it. It should also show that the presenters are, in their view, objective and in the public interest.

From: Warren Havens <warren.havens@sbcglobal.net>
To: Richard Arsenault <Richard.Arsenault@fcc.gov>
Cc: Julius Knapp <Julius.Knapp@fcc.gov>; Ronald Lindsey <ron@strategicrailroading.com>; Ron Lindsey <comarch@aol.com>; "kevin.nichter@lileesystems.com" <kevin.nichter@lileesystems.com>; Erin McGrath <Erin.McGrath@fcc.gov>; "jstobaugh@telesaurus.com" <jstobaugh@telesaurus.com>
Sent: Friday, September 2, 2011 12:15 PM
Subject: Re: dock. 11-79- meeting request, with noted railroad experts, re nationwide PTC- nature, tech, spectrum, etc.

Mr. Arsenault,

I can make either date.
Once I get final response from Mr. Lindsey and Mr. Nichter, I'll get back to you.
Mr. Lindsey is working on that now.
Since Ms. McGrath is not involved in PTC now, as you write, I deleted her form the email string.

Thank you,

Warren Havens

From: Richard Arsenault <Richard.Arsenault@fcc.gov>
To: Warren Havens <warren.havens@sbcglobal.net>; Erin McGrath <Erin.McGrath@fcc.gov>
Cc: Julius Knapp <Julius.Knapp@fcc.gov>; Ronald Lindsey <ron@strategicrailroading.com>; Ron Lindsey <comarch@aol.com>; kevin.nichter@lileesystems.com; jstobaugh@telesaurus.com; Richard Arsenault <Richard.Arsenault@fcc.gov>
Sent: Friday, September 2, 2011 8:27 AM

Subject: RE: dock. 11-79- meeting request, with noted railroad experts, re nationwide PTC- nature, tech, spectrum, etc.

September 2, 2011

Dear Mr. Havens

I would be happy to arrange the meeting requested in your August 26 email, below. Please let me know if your group would be available from 1 to 2 PM (Eastern) on either Wednesday 9/14 or Friday 9/16. I can be reached at 202 418 0920 today if you would like to discuss further.

(Also, please note that Ms. McGrath is detailed to Commissioner McDowell's Office and therefore not working on PTC-related matters on behalf of the Wireless Telecommunications Bureau at this time.)

Regards,

-Richard Arsenault

From: Warren Havens [mailto:warren.havens@sbcglobal.net]
Sent: Thursday, September 01, 2011 9:48 PM
To: Richard Arsenault; Erin McGrath
Cc: Julius Knapp; Ronald Lindsey; Ron Lindsey; kevin.nichter@lileesystems.com; jstobaugh@telesaurus.com
Subject: Re: dock. 11-79- meeting request, with noted railroad experts, re nationwide PTC- nature, tech, spectrum, etc.

Mr. Arsenault and/or Ms. McGrath,

Do you have time for a phone call tomorrow on the below?
If not tomorrow, then early next week?
I am on Pacific time, but can start early if better for you.

If you would like Mr. Lindsey to also be on a call, let us know and he and I will try to arrange that.
Likewise re Mr. Nichter (but I am less sure of his availability).

- Warren Havens

From: Warren Havens <warren.havens@sbcglobal.net>
To: Richard Arsenault <Richard.Arsenault@fcc.gov>; "Erin.mcgrath@fcc.gov" <Erin.mcgrath@fcc.gov>
Cc: julius knapp <julius.knapp@fcc.gov>; Ronald Lindsey <ron@strategicrailroading.com>; Ron Lindsey <comarch@aol.com>; "kevin.nichter@lileesystems.com" <kevin.nichter@lileesystems.com>; "jstobaugh@telesaurus.com" <jstobaugh@telesaurus.com>
Sent: Friday, August 26, 2011 7:47 AM
Subject: dock. 11-79- meeting request, with noted railroad experts, re nationwide PTC- nature, tech, spectrum, etc.

Mr. Arsenault, Ms. McGrath:

Since Ms. McGrath is listed in the PN commencing the subject docket 11-79 (spectrum etc for PTC), and since I understand Mr. Arsenault is also involved (and we discussed this docket once previously), I address this to you two. But I assume any meeting as requested below may involve other persons from the WTB.

I also copy here Mr. Knapp. The proposed meeting discussion would in substantial part deal with engineering and technology. Thus, it would be desirable if Mr. Knapp or persons he may designate from OET could attend the requested meeting, as well.

This email, after a response, will also timely be filed as an ex parte presentation in docket 11-79.

Request for meeting on:
Fundamental Nature of PTC (and broader Railroad Wireless), and Technical and Spectrum Issues.

The below presenters will be happy to discuss this request by phone.

TIme: Within next 3-4 weeks.: by end of September.

Three presenters:
Mr. Ron Lindsey [1] would attend, in person.
Mr. Kevin Nichter [2]- probably would attend, probably in person.
(Per past discussion, expect to attend, but the undersigned cannot immediately reach Mr. Nichter to confirm.)
Mr. Warren Havens [3] would attend, probably by teleconference.

Powerpoint presentation, with discussion.

Approximate one hour total, but given the importance, a longer time is requested.
Or in two back-to-back days, each for an hour.

Presentation Outline
(draft, may differ somewhat in final):

I. PTC Discussion.
By Ron Lindsey [1]

- purpose
- what it is ... and what it isn't
- structure and components
- wireless requirements

II. Questions Posed and Answered.
By Mr. Lindsey [1], with some input from Kevin Nichter [2].

- *What is the the value for new wireless for railroads, including PTC?*
- Great value, but needs realistic, capable approach. (Reference: several papers by Mr. Lindsay.)
- *What wireless technical specs are in the PTC mandate?*
- None!, the FRA provided a functional requirement, not a technical one - including wireless
- *Did the railroads purposely seek and select 220 as the appropriate band for PTC?*
- No!, UP and NS had purchased the 220 prior to the mandate for purposes unknown. BNSF and CSX were required for interoperability purposes to forego their individual wireless agendas for PTC to accept the 220 MHz range spectrum (217-222 MHz) (here, "220").
- *Is the current 220 owned by PTC-220 sufficient for PTC?*
- Unquestionably, based upon my knowledge of PTC and the fact that BNSF and CSX were going with the lower performance of Meteorcomm and commercial cellular respectively. But the bottom line is that at the time of the submissions, the railroads had yet to provide results from an appropriate data analysis.
- *Can the on-board PTC platform deal with multiple communication paths, i.e., does it have to be 220 and nothing but 220?*
- Yes, the onboard platform incorporates a Mobile Access Router (MAR) that provides for multiple paths including cellular, WiFi, 220 and other yet to be identified. Additionally, the use of SDR can greatly facilitate this advancement that has yet to be explored by most, if not all, railroads.
- *Does the above mean that the Passenger Operations are not just limited to 220?*
- Yes!
- *What are the railroads doing with the refarming of the 160-161 band?*
- The railroads are making the transition from Analog to Digital to provide for the eventual requirement for 6.25. However, they have selected to use conventional instead of trunking technology that may have provided the necessary channels for PTC. Unfortunately, this point is known to have been evaluated as well, along with the basic requirements for PTC.
- *PTC-220 listed a number of examples of the use of significant wireless technologies to advance railroad safety. Do those examples represent the challenges for PTC relative to wireless?*
- No!, PTC is a very simple system relative to those systems as presented earlier.
- *[A few others additions, or changes.]*

III. Kevin Nichter of Lilee Systems [2] will briefly present the perspective of Lilee.

- SDR radios for PTC (PTC220 protocol, and others) and for broader railroad wireless, etc. See website at [2] below).

IV. Questions from **FCC.**

V. Warren Havens, for Skybridge et al [3] will present a brief explanation of spectrum offerings for PTC.

Note: I have generally argued for years, like Mr. Lindsay, that railroad should not get stuck on 220 MHz range spectrum, but adopt smart, SDR, multi-band, multi-protocol radios, reuse their own existing spectrum better, etc. But if want 220 MHz range, I have two proposals, on open non-confidential terms:
Both are in docket 11-79:

- PTC Spectrum Offer 1: (partial summary) No cost for substantial spectrum (in 217-220 MHz) for PTC nationwide for metro public passenger rail entities, based on FCC grant of "swap" spectrum in 30-50 MHz range for a "cognitive radio" license for nationwide smart transport, energy and environment (with core capacity and functions at no cost, like GPS).

- PTC Spectrum Offer 2: (partial summary) Sale for price in range of what MCLM sold spectrum to SCRRA (which is shown in the FCC assignment application) and with options for railroads to terminate the sale, if incumbents (in some markets) are not cleared or any other reason. That is, this will secure spectrum now, and allow PTC to proceed, if indeed railroads believe they need this 220 MHz range spectrum, or will be more efficient with it, for PTC. Sellers will put some of the proceed back into ITS in the US for nonprofit basis, etc. All contracts would be public, open, and not restrict railroads from another other spectrum solution.

Questions from FCC.

VI. Closing.
Offer to meet again on these PTC-related matters with the FCC including PTC-220, APTA, FTA, and/or whoever the FCC may propose.
- - - - -

The meeting presentation- discussion would be summarized and placed in docket 11-79.
If the FCC suggests, we can have it video or tape recorded and have that posted as sound or video files in the docket.

- - - - -

[1] Ron Lindsey of Communications Architecture / Strategic Railroading.
See: http://strategicrailroading.com/about/
Mr. Ron Lindsey is the father of **Strategic Railroading** and of the core operating strategies used by the infant rail holding corporation – **Maendeleo Rail**....
" Mr. Lindsey has 35+ years in the industry both as railroad management and as an independent consultant. As railroad management, he held the positions of Chief Engineer Communications at Conrail (when Class I) and Director of Advanced Train Control at CSX. In this latter position, he was the architect for the first overlay **PTC** system that has provided the basis for the PTC systems being pursued by the Class I's. Additionally, he is the Project Leader for an engagement for the Egyptian National Railways to evaluate the safety and efficiency of its operations including the feasibility of implementing PTC. Similarly, he has been requested to submit proposals to other national railroads in Eurasia. Lastly, Mr. Lindsey is actively seeking to assist railroads in Africa and South America that could benefit by implementing pragmatic, non-signaling solutions for safe operations in lieu of capital-intensive traditional and advanced traffic control systems, e.g., ETCS.
Mr Lindsey has served for 18 years as an independent consultant, therefore he does not represent suppliers or accept commissions.
Mr. Lindsey focuses on the strategic advancement of operations via technologies.
Recent engagements include the following:

- Strategic Crew Management Study – BNSF
- Tactical & Strategic AEI Study – CP Rail
- Strategic Wireless Study – FRA

- Advanced Grade Crossing Market Study.- supplier
- Integrated Intermodal Information Flow & Architecture – supplier

" Mr. Lindsey offers a 1-2 day **Railroad Immersion Course** that has been used by Class I's and suppliers alike to evaluate their use and marketing of technologies, respectively, in the North American rail industry. Some version of the course has been taken by CP Rail, Ansaldo, Wabtec, Locheed Martin, Bombardier, Alstom, Cisco, Motorola, IBM, Princeton Consultants, and others. He also has a 1-day PTC Course for those looking to understand the concept, technologies, and opportunities for Positive Train Control.
Mr. Lindsey is the author of the quarterly journal ***Full Spectrum***, which has been published and read across the Rail Industry for 14 years. Full Spectrum's subscribers include Class I railroads, FRA, and major suppliers.
He has also been published in the Journal of Transportation, Progressive Railroading, and IEEE's Vehicular Technologies, and he is currently a Contributing Editor for Railway Age and a frequent a speaker at railroad conferences both in the U.S. and internationally.

" Prior to his railroad careers, Mr. Lindsey was with IBM and the Trustees of the Penn Central Railroad.
Mr. Lindsey's formal education includes a Master of Business Administration degree from the University of Pittsburgh and a Bachelor of Science degree in Metallurgy from Pennsylvania State University. He also has extensive training / experience in Business System Planning, Technical Sales, Presentation Techniques, and various Operation Research tools."

See also Mr. Lindsey's filings in docket 11-79.
Skybridge Spectrum Foundation and supporters (SSF et al) will pay for Mr. Lindsey's presentation fees and expenses, on the basis that he is entirely free to present his own objective views. That is the same basis that SSF et al funded his presentations in 11-79. Long before that, Mr. Lindsey presented essentially the same views (and more) in his various railroad industry publications.

[2] Kevin Nichter of Lilee Systems.
See: http://lileesystems.com/
See: http://lileesystems.com/wp-content/uploads/2011/06/2.pdf (Norman Y. Mineta, joins Lilee Board)
See: http://lileesystems.com/company/team/
" Kevin Nichter, Director, Product Line Management
" Kevin Nichter has over 10 years of experience in marketing and engineering in the rail and transit industries. Prior to joining Lilee Systems, he held roles at Safetran Systems (now Invensys Rail North America) as Product Line Manager for Communications and Principal Engineer for PTC projects. Kevin also has experience in Communications-Based Train Control and served as Product Line Manager for the radio subsystem for projects in Singapore, Taiwan, Brazil, and Spain. Kevin has experience in ATCS and other legacy code systems as well as IP and messaging system convergence for train control systems."

[3] Warren Havens, President of below companies.
See tech papers at: *www.scribd.com/warren_havens/shelf*
As the FCC is aware: these companies hold AMTS A- and B-block spectrum nearly nationwide, and substantial 220-222 MHz spectrum, along with M-LMS and other 900 MHz, and Part 22 35- and 43- MHz. These companies hold the largest amount of 217-222 MHz in the nation (and largest amount of 900 MHz for Intelligent Tranport). This spectrum is all dedicated to wireless for smart transport, energy and environment, much of that in Skybridge Spectrum Foundation, for nonprofit wireless in the public interest. These companies challenge others-- government, for-profit entities, and the nonprofit sector-- to openly pursue wireless in the public interest for these other other critical national needs.

Sincerely,
Warren Havens

President
Skybridge Spectrum Foundation
ATLIS Wireless LLC
V2G LLC
Environmentel LLC
Verde Systems LLC
Telesaurus Holdings GB LLC

Intelligent Transportation & Monitoring Wireless LLC
Berkeley California
www.scribd.com/warren_havens/shelf
510 841 2220 x 30
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